Effects of changes in flows of funds between Government and households.A SAM approach to Portugal

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Effects of changes in flows of funds between Government and households. A SAM approach to Portugal.

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Abstract

Through the use of aggregate Social Accounting Matrices for Portugal, the flows of funds from three government subsectors to households will be studied, as well as the flows from the latter to the former.
From the SAM modelling, both a static and a comparative static analysis will be made, in order to specify the effects of changes in the flows of funds between households and government subsectors.

Key Words: Social Accounting Matrix; Economic Planning; Macroeconomic Modelling.

JEL Classification: D57; H31; E60

(July 2005)

CONTENTS

1. INTRODUCTION

Using the Social Accounting Matrix as a working instrument, this paper[1] has two main purposes: on the one hand, to identify the flows of funds between households and three government subsectors in Portugal in 1999 and, on the other hand, to study the effects of changes in such flows.

Compiled from the Portuguese System of National Accounts, which is in perfect harmony with the System of National and Regional Accounts in the European Community introduced in 1995 (ESA95), the SAMs constructed for the Portuguese economy for 1998 and 1999 can be seen as its matrix representation, showing the entire circular flow of income.

As will be seen in section 2, square matrices will be used, in which each transaction is recorded only once in a cell of its own. It is conventionally agreed that the entries made in rows represent income or receipts, whilst the entries made in columns represent outlays or expenditure. These figures will include both production and institutional accounts, which are subdivided into yet other accounts, defined in accordance with the purposes of the study. Therefore, the constructed SAMs consist of a set of interrelated subsystems that not only provide an analytical picture of the Portuguese economy in 1998 and 1999, but also, as will be seen in section 3, serve as an instrument for assessing the effects of changes in the flows of funds between households and government. Section 4 ends the paper with a summary and some concluding remarks.

2. THE PORTUGUESE SAM STRUCTURE AND THE FLOWS OF FUNDS BETWEEN HOUSEHOLDS AND GOVERNMENT

Studies made by Pyatt, Round and Roe (Pyatt, 1988, 1991; Pyatt and Roe, 1977; Pyatt and Round, 1985), among others, as well as the author's own previous experience (Santos, 1999, 2001, 2003a, 2003b, 2004a, 2004b), coupled with the aim of studying the (non-financial) flows[2] of funds between the Portuguese government and households and their changes, led to the development of the present work using the basic Portuguese SAM for 1999, which is presented in Table 1.

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[1] Presented to the *15th International Input-Output Conference,* held at the Renmin University of China, Beijing, on 28 June 2005.

[2] In one of my previous works (Santos, 1999), financial flows were also included. When SAMs began to be constructed with data from the European System of National and Regional Accounts in the European Community of 1995 (ESA 95), this proved to be impossible due to a lack of available information.

Table 1. Basic Portuguese SAM for 1999 (in millions of euros)

Outlays (expenditures) / Incomes (receipts)			Institutions		Production			Rest of the World (RW)	Errors and Omissions	TOTAL
			Current A.	Capital A.	Factors	Activities	Products			
			1, … 6	7, … 12	13, 14	15, … 17	18, … 20	21	22	
Institutions	Current Account	1, … 6	Current Transfers (62 222)	0	National Product (92 152)	Other net taxes on production (-832)	Net taxes on products (15 025)	Current Transfers from the RW (4 827)	0	Aggregate Income (173 394)
Institutions	Capital Account	7, … 12	Domestic Saving (21 143)	Capital Transfers (6 416)	0	0	0	Capital Transfers from the RW (3 009)	Net lending/ borrowing (6 570)	Investment Funds (37 138)
Production	Factors	13, 14	0	0	0	Added Value (93 707)	0	Compensation of Factors from the RW (4 122)	0	Aggregate Factor Income (97 829)
Production	Activities	15, … 17	0	0	0	0	Production (203 614)	0	0	Production Value (203 614)
Production	Products	18, … 20	Final Consumption (86 864)	Gross Capital Formation (30 585)	0	Intermediate Consumption (110 801)	0	Exports (32 089)	0	Aggregate Demand (260 340)
Rest of the World		21	Current Transfers to the RW (3 165)	Capital Transfers to the RW (137)	Compensation of Factors to the RW (5 678)	Other net taxes on production (-63)	Imports (41 700)	0	0	Value of transfers to the RW (50 617)
Errors and Omissions		22	0	0	0	0	Trade Margins (0)	Net lending / borrowing (6 570)	0	Net lending/ borrowing (6 570)
TOTAL			Aggregate Income (173 394)	Aggregate Investment (37 138)	Aggregate Factor Income (97 829)	Total Costs (203 614)	Aggregate Supply (260 340)	Value of transfers from the RW (50 617)	Net lending / borrowing (6 570)	

Source: Appendix A (SAM for 1999)

As is shown by the numbers of the accounts, further disaggregation was undertaken of the framework described above, always in keeping with the National Accounts Nomenclature. So, in the constructed matrices, appendix A (see the description of their cell contents in appendix B), the current and capital accounts of institutions were divided into households, enterprises (non-financial corporations), central and local government and social security funds (which constitute the general government), and other institutions (financial corporations and non-profit institutions serving households). On the other hand, the factors of production accounts were disaggregated into labour and capital and the activities and products accounts into primary, secondary and tertiary groups[3].

From the analysis of the flows of funds between households and the three government subsectors, shown by the Portuguese SAMs, we may emphasise the following aspects for 1999 (those for 1998 are very similar).

About one half (31,936 million euros) of the current transfers within the Portuguese economy (62,222 million euros) were received by households, 81% of which were made by the government. Central government contributed with 49.6% of these transfers, social security funds with 46.5% and local government with 3.9%. Social benefits, including social transfers in kind, represented about 94% of these transfers, the remaining 6% being miscellaneous current transfers. Current transfers to households amounted to 67.6% of total current transfers from government to national institutions in 1999. On the other hand, 12,685 million euros represented the total current outlays of households (20% of the current transfers within the Portuguese economy), 83% of which were to government. The transfers made to central and local government (respectively, 59.4% and 2.7%) were: current taxes on income, wealth, etc. (62% of the total transferred to central and local government); employees' social contributions; social contributions by self-employed and non-employed persons; and miscellaneous current transfers. The last three items amounted to 38% of the current transfers from households to government, this being the sum that was received by the social security funds.

Capital transfers were much less important: 6,416 million euros was the total of capital transfers occurring within Portuguese institutions and the share of this received by households was only 572 million euros, 45.3% of which came from government – essentially investment grants from central (91%) and local (9%) government. Capital transfers to households amounted to 4.6% of total capital transfers from government to Portuguese institutions. The total capital outlays of households

[3] The primary group includes agriculture, forestry and fishing (activities/products 01 to 05 of the National Accounts System). The secondary group includes industry, which in turn includes energy and construction (activities/products 10 to 45 of the National Accounts System). The tertiary group includes the rest of the economy (activities/products 50 to 95 of the National Accounts System).

amounted to 103 million euros (1.6% of the capital transfers taking place within the Portuguese economy), which were capital taxes and other capital transfers to central (92.7%) and local (7.3%) government.

As employees, households also received compensations for their labour to the amount of 41,242 million euros, about 37.8% of which was paid by government: 32.3% by central government, 4.8% by local government and 0.7% by social security funds.

The effects of changes in these flows (transfers) will now be studied through the SAM modelling.

3. EFFECTS OF CHANGES IN FLOWS OF FUNDS BETWEEN HOUSEHOLDS AND GOVERNMENT

In keeping with the methodology based on the use of multipliers (Appendix C.1), the study of the effects of changes in the flows of funds from government to households and vice-versa will be undertaken considering all the accounts as endogenous, except for those whose flows will be the subject of special study, in other words, firstly (see section 3.1), except for the government subsectors accounts (3-5 and 9-11) and, thereafter (see section 3.2), except for the household accounts (1 and 7)[4].

Using average expenditure propensities and the accounting multipliers, one can see, respectively, the direct and global effects of a unitary change in the current and capital receipts of households (section 3.1) or government (section 3.2), assuming that their expenditure structure does not change. Marginal expenditure propensities and fixed-price multipliers provide the same information, but these are based on the assumption that the expenditure structure changed in exactly the same way as it had done in the previous year (1998).

[4] This is my first experiment, in which I only consider as exogenous those accounts for which I intend to study the effects of changes on their flows.
A test was carried out of the multipliers used in section 3.1, in accordance with the established methodology. Thus, accounting multipliers were first calculated from the Portuguese SAM for 1998, whilst the changes that actually occurred from 1998 to 1999 were also considered, i.e. the "x" vector of the Portuguese SAM for 1999, and the new vector of receipts of the endogenous accounts ($y_{n,}$ estimated for 1999) was calculated. Not forgetting that, with this test, the expenditure structure for the calculation of $y_{n,}$ estimated for 1999, is the same as that of 1998. The percentage differences between the latter and the real $y_{n,}$ for 1999, were as follows:
- Aggregate income of households, +2.96; enterprises, +0.14; other institutions, +5.46.
- Aggregate investment/investment funds of households, -0.30; enterprises, -0.65; other institutions, -7.55.
- Compensation of labour, +1.66; capital, +4.74.
- Production value/total costs: primary activities, +6.36; secondary activities, +6.08; tertiary activities, +1.62.
- Aggregate demand/supply: primary products, +9.28; secondary products, +4.24; tertiary products, +0.50.
- Values of transfers to and from the rest of the world: +1.85.
- Net borrowing of the Portuguese economy: -25.31.
All criticisms and suggestions in relation to this subject will be most welcome.

The mathematical sign of these values shows their relationship with the initial change, in other words a positive effect means that initial increases (decreases) result in increases (decreases) and a negative effect means that initial increases (decreases) result in decreases (increases).

The following analysis will only consider the flows in which government and households were involved.

3.1. Effects of changes in flows of funds from government to households

In the context described above, and bearing in mind the SAMs and the description of their cell contents (Appendixes A and B), the flows of those funds from central and local government and social security funds to households which can be changed (the cells of rows 1 and 7 of the X matrix that represent injections from the government into the households' accounts) are:

1. Social benefits other than social transfers in kind, social transfers in kind and miscellaneous current transfers (cells: (1,3); (1,4) and (1,5)) – the current receipts of households from government;
2. Investment grants and other capital transfers (cells: (7,9) and (7,10)) – the capital receipts of households from government.

Due to the SAM structure we are working with, described in section 2, the factors of production compensated by government cannot be isolated from those compensated by other institutions and, therefore, cannot be studied, although, as was said before, we know that about 37.8% of the compensation of labour (received by households) was paid by the government.

a) Effects of a unitary change on the current receipts of households from government

In 1999, the current receipts (transfers) of households from the government (25,813 million euros) were 26% of their aggregate income. As mentioned above, we are speaking about social benefits, including social transfers in kind, and miscellaneous current transfers.

Table 2. Direct effects of a unitary change in the current receipts of households from government, in 1999

	The households' expenditure structure does not change	The households' expenditure structure changes exactly as it did from 1998 to 1999
Current transfers		
- within households, to other institutions and to the rest of the world	0.045	0.028
- to government	0.106	0.128
Gross savings	0.060	- 0.123
Final consumption		
- primary products	0.030	0.099
- secondary products	0.370	0.385
- tertiary products	0.390	0.574

Source: Appendix C.2.a) (column 1 of the A_n, A_l, D_n and D_l matrices)

There is no doubting the importance of final consumption, especially in terms of secondary and tertiary products, but what is also interesting here is the position of the current transfers to government, in other words the current taxes on income, wealth, etc., employees' social security contributions, the social security contributions paid by self-employed and non-employed persons and miscellaneous current transfers (paid by households).

Table 3. Global effects of a unitary change in the current receipts of households from government, in 1999

	The households' expenditure structure does not change	The households' expenditure structure changes exactly as it did from 1998 to 1999
Aggregate income of:		
- households	2.625	1.974
- enterprises	0.388	0.386
- other institutions	0.151	0.048
Aggregate investment/ investment funds of:		
- households	0.180	0.111
- enterprises	0.363	0.380
- other institutions	0.033	0.077
Compensation of labour	1.162	0.986

	The households' expenditure structure does not change	The households' expenditure structure changes exactly as it did from 1998 to 1999
Compensation of capital	1.018	0.529
Production value/total costs		
- primary activities	0.156	0.047
- secondary activities	1.975	0.709
- tertiary activities	2.412	2.090
Aggregate demand/supply		
- primary products	0.223	0.007
- secondary products	3.448	1.886
- tertiary products	2.152	2.124
Transfers to and from the rest of the world	1.122	0.909
Net borrowing of the Portuguese Economy	0.153	0.518

Source: Appendix C.2.a) (column 1 of the M_a and M_{pf} matrices)

Apart from the global effect on the aggregate income of households, where 1 is the initial injection of income (current transfers from government), the greatest global effects were felt on production values/total costs (secondary and tertiary activities, in particular) and aggregate demand/supply (secondary and tertiary products, in particular), reflecting the great importance of final consumption (secondary and tertiary products, in particular) for the total current outlays of households, as seen in the analysis of the direct effects. One should also take into account the values associated with the compensation of labour and capital.

b) Effects of a unitary change in the capital receipts of households from government

In 1999, the capital receipts (transfers) of households from government (259 million euros) were 3.6% of their investment funds. As seen before, we are speaking about investment grants and other capital transfers.

Table 4. Direct effects of a unitary change in the capital receipts of households from government, in 1999

	The households' expenditure structure does not change	The households' expenditure structure changes exactly as it did from 1998 to 1999
Gross capital formation		
- primary products	0.030	0.049
- secondary products	0.921	0.659
- tertiary products	0.170	0.365
Capital transfers		
- to government (central and local)	0.014	0.016
- to the rest of the world	-0.134	-0.088

Source: Appendix C.2.a) (column 7 of the A_n, A_l, D_n and D_l matrices)

The greatest direct impact is felt at the gross capital formation level, especially at the level of secondary and tertiary products. As was the case with current receipts (a)), the government also benefits through the increase in capital taxes and other capital transfers, with there also being a possible increase in its capital transfers to households. The direct effect on capital transfers to the rest of the world is also considerable, meaning that the possible increase in the capital receipts of households from government will result in a decrease in the value of the "acquisitions minus disposals of non-produced non-financial assets and other capital transfers from households to the rest of the world" or an increase in the disposals of non-produced non-financial assets[5].

Table 5. Global effects of a unitary change in the capital receipts of households from government, in 1999

	The households' expenditure structure does not change	The households' expenditure structure changes exactly as it did from 1998 to 1999
Aggregate income of:		
- households	1.577	1.020
- enterprises	0.381	0.387
- other institutions	0.132	0.045

[5] Non-produced non-financial assets consist of land, other tangible assets that may be used in the production of goods and services, and intangible assets. Intangible non-produced assets consist of patented entities, leases or other transferable contracts, purchased goodwill and other intangible non-produced assets (ISWG, 1993 – Paragraphs 10.120 and 10.130).

	The households' expenditure structure does not change	The households' expenditure structure changes exactly as it did from 1998 to 1999
Aggregate investment/ investment funds of:		
- households	1.126	1.333
- enterprises	0.442	0.435
- other institutions	0.005	0.091
Compensation of labour	1.127	1.032
Compensation of capital	1.006	0.533
Production value/total costs		
- primary activities	0.170	-0.010
- secondary activities	2.372	0.944
- tertiary activities	2.086	2.035
Aggregate demand/supply		
- primary products	0.241	-0.005
- secondary products	4.152	2.528
- tertiary products	1.859	2.063
Transfers to and from the rest of the world	1.137	1.151
Net borrowing of the Portuguese Economy	0.300	0.678

Source: Appendix C.2.a) (columns 7 of the M_a and M_{pf} matrices)

Note: other institutions are financial corporations and non-profit institutions serving households.

The low values of the (global) effects on the aggregate investment/investment funds of households, where 1 is the initial injection of income, show the relatively minor influence on those funds of capital transfers from government. Much more significant are the (global) effects on production values/total costs and aggregate demand/supply (secondary and tertiary activities/products, in particular), as well as on the compensation of labour and capital and transactions with the rest of the world, reflecting the important direct effects on gross capital formation, as analysed before, especially at the level of secondary and tertiary products.

3.2. Effects of changes in flows of funds from households to government

The flows of funds from households to central and local government and social security funds that can be changed (the cells of rows 3-5 and 9-11 of the X matrix that are injections from households into the government's accounts) are:

1. Current taxes on income, wealth, etc., employees' social contributions, social contributions by self-employed and non-employed persons and miscellaneous current transfers (cells: (3,1); (4,1) and (5,1)) – the current receipts of the government from households;
2. Capital taxes and other capital transfers[6] (cells: (9,7) and (10,7)) – the capital receipts of the government from households.

a) Effects of a unitary change in the current receipts of the government from households

In 1999, the current receipts (transfers) of the government from households (10,514 million euros) were 21.5% of the government's aggregate income. As mentioned above, we are speaking here about current taxes on income, wealth, etc., employees' social security contributions, social security contributions paid by self-employed and non-employed persons and miscellaneous current transfers.

Table 6. Direct effects of a unitary change in the current receipts of the government from households, in 1999

	The government's expenditure structure does not change			The government's expenditure structure changes exactly as it did from 1998 to 1999		
	Central G.	Local G.	SSF	Central G.	Local G.	SSF
Current transfers						
- within government, to other institutions and to the rest of the world	0.381	0.125	0.091	0.464	-0.038	0.095
- to households	0.433	0.207	0.832	0.409	0.186	0.879
Gross savings	-0.004	0.150	0.054	-0.035	0.419	-0.010
Final consumption						
- primary products	0.000	0.000	0.000	0.000	0.000	0.000
- secondary products	0.027	0.032	0.002	0.024	0.027	0.003
- tertiary products	0.164	0.486	0.022	0.137	0.405	0.033

Source: Appendix C.2.b) (columns 3-5 of the A_n, A_l, D_n and D_l matrices)

Curiously, the direct effects on the current receipts of the government subsectors from households are felt mainly in the current transfers to households, except in the case of local government, where such effects are felt mainly at the level of final consumption. As seen before, those transfers are social benefits, including social transfers in kind, and miscellaneous current transfers.

[6] There are no capital transactions between households and social security funds. These only exist between households and central and local government.

Table 7. Global effects of a unitary change in the current receipts of the government from households, in 1999

	The government's expenditure structure does not change			The government's expenditure structure changes exactly as it did from 1998 to 1999		
	Central G.	Local G.	SSF	Central G.	Local G.	SSF
Aggregate income of:						
- enterprises	0.065	0.145	0.023	0.096	0.176	0.027
- Central Gov.	1.363	0.160	0.094	1.493	0.309	0.090
- Local Gov.	0.068	1.120	0.009	0.119	0.979	0.013
- Social Security Funds	0.131	0.081	1.017	0.164	0.078	1.013
- other institutions	0.054	0.094	0.047	0.043	0.091	0.067
Aggregate investment/ investment funds of:						
- enterprises	0.028	0.075	0.036	0.030	0.200	0.015
- Central Gov.	-0.012	-0.022	0.067	0.147	0.019	0.018
- Local Gov.	0.011	0.182	0.019	-0.154	0.444	-0.019
- Social Security Funds	0.008	0.006	0.055	0.005	0.005	-0.009
- other institutions	0.024	0.048	0.023	-0.197	0.062	0.005
Compensation of labour	0.202	0.458	0.060	0.229	0.427	0.040
Compensation of capital	0.165	0.371	0.053	0.125	0.234	0.022
Production value/total costs						
- primary activities	0.011	0.026	0.006	0.017	0.044	0.003
- secondary activities	0.198	0.497	0.117	0.142	0.352	0.025
- tertiary activities	0.504	1.113	0.116	0.503	0.871	0.089
Aggregate demand/supply						
- primary products	0.015	0.036	0.008	0.003	0.007	0.001
- secondary products	0.342	0.862	0.204	0.377	0.940	0.065
- tertiary products	0.445	0.995	0.104	0.511	0.883	0.091
Transfers to and from the rest of the world	0.155	0.300	0.070	0.114	0.393	0.023
Net borrowing of the Portuguese Economy	-0.028	-0.055	0.013	0.061	0.251	0.012

Source: Appendix C.2.b) (columns 3-5 of the M_a and M_{pf} matrices)

Except for government subsectors, where 1 represents the initial injection of income, none of the global effects are significant, although one should perhaps emphasise the effects on production value/total costs and aggregate demand/supply (mainly secondary and tertiary activities/products),

certainly reflecting the impact on final consumption of the direct effects on current transfers to households, as seen above (analysis of Table 6).

b) Effects of a unitary change in the capital receipts of the government from households

In 1999, the capital receipts (transfers) of the government from households (103 million euros) amounted to 1% of its investment funds (including social security funds or not). As seen before, we are speaking about capital taxes and other capital transfers (paid by households to central and local government).

Table 8. Direct effects of a unitary change in the capital receipts of the government from households, in 1999

	The government's expenditure structure does not change		The government's expenditure structure changes exactly as it did from 1998 to 1999	
	Central G.	Local G.	Central G.	Local G.
Gross capital formation				
- primary products	0.000	0.000	0.000	0.000
- secondary products	0.315	0.831	2.254	0.800
- tertiary products	0.003	0.007	0.134	0.046
Capital transfers				
- within government; to enterprises, other institutions and the rest of the world	0.647	0.154	-1.583	0.148
- to households	0.036	0.008	0.195	0.006

Source: Appendix C.2.b) (columns 9 and 10 of the A_n, A_l, D_n and D_l matrices)

The direct effects are felt mainly at the level of the gross capital formation on secondary products, except in the case of central government (if we are considering that the government's expenditure structure does not change), where the main effect is felt at the level of capital transfers. In this case, households benefit very little from the possible increase in their capital outlays to government.

Table 9. Global effects of a unitary change in the capital receipts of the government from households, in 1999

	The government's expenditure structure does not change		The government's expenditure structure changes exactly as it did from 1998 to 1999	
	Central G.	Local G.	Central G.	Local G.
Aggregate income of:				
- enterprises	0.171	0.177	-0.271	0.164
- Central Gov.	0.268	0.284	-0.352	0.347
- Local Gov.	0.049	0.051	-0.096	0.080
- Social Security Funds	0.102	0.106	-0.081	0.077
- other institutions	0.058	0.061	-0.041	0.032
Aggregate investment/ investment funds of:				
- enterprises	0.559	0.403	1.110	0.325
- Central Gov.	1.464	0.236	-3.110	0.043
- Local Gov.	0.374	1.140	4.525	1.118
- Social Security Funds	0.008	0.002	-0.091	0.009
- other institutions	0.046	0.028	4.888	0.045
Compensation of labour	0.480	0.498	-0.657	0.405
Compensation of capital	0.453	0.470	-0.362	0.224
Production value/total costs				
- primary activities	0.067	0.070	-0.054	0.081
- secondary activities	1.412	1.519	-0.620	0.653
- tertiary activities	0.671	0.664	-1.272	0.589
Aggregate demand/supply				
- primary products	0.092	0.097	-0.008	0.013
- secondary products	2.479	2.667	-1.663	1.766
- tertiary products	0.596	0.590	-1.288	0.587
Transfers to and from the rest of the world	0.740	0.767	1.645	0.680
Net borrowing of the Portuguese Economy	0.283	0.311	0.896	0.530

Source: Appendix C.2.b) (columns 9 and 10 of the M_a and M_{pf} matrices)

There are significant differences in the structure and level of the global effects of a unitary change in the capital receipts of central government from households, depending on whether or not there is a change in its expenditure structure, with significant changes being noted in the latter case from

1998 to 1999. In spite of this, it may be concluded that the most significant global effects are felt at the level of the production value/total costs of secondary activities and the aggregate demand/supply of secondary products, reflecting the direct effects on gross capital formation at the level of secondary products, which were analysed previously. In the investment/investment funds of central and local government, 1 is the initial injection.

4. SUMMARY AND CONCLUSIONS

The SAM was the work instrument that made it possible to analyse the flows of funds between households and government in Portugal in 1999, as well as, the impact of changes occurring in such flows.

Portuguese households received about 50% and paid about 20% of current transfers occurring within the economy in 1999. Most of the former were social benefits, including social transfers in kind, from central government and social security funds, which represented more than half of the total current transfers from government. Most of the latter were current taxes on income, wealth, etc., paid to central and local government.
On the other hand, in 1999, Portuguese households received only 9% and paid only 1.6% of capital transfers within the economy. The former were essentially investment grants, received from central government, whereas the latter were capital taxes paid to central government.
About 38% of the compensation of employees received by households was paid by the government, 32.3% of which was paid by central government.

Changes in the current transfers from government to households (26% of the households' aggregate income, in 1999), in other words social benefits, including social transfers in kind, and miscellaneous current transfers, had the greatest direct effects at the level of the households' final consumption, whereas changes in the capital transfers from government to households (3.6% of the households' investment funds, in 1999), in other words investment grants and other capital transfers, had the greatest direct effects at the level of the gross capital formation of the latter. These changes led to significant global effects at the level of the aggregate demand/supply, production value/total costs of the economy, aggregate income of institutions and the compensation of labour and capital. In both cases, the government also felt positive direct effects at the level of its receipts from households, namely in the form of social contributions and current and capital taxes.

Changes in current transfers from households to government (21.5% of the government's aggregate income, in 1999), in other words current taxes on income, wealth, etc., employees' social contributions, social contributions paid by self-employed and non-employed persons and miscellaneous current transfers, had the most significant effects at the level of current transfers from government to households, whereas changes in capital transfers from households to government (1% of the government's investment funds, in 1999), in other words capital taxes and other capital transfers, had the most significant direct effects at the level of the gross capital formation of local and central government. The global effects resulting from these changes were felt mainly at the level of the production value/total costs of the economy and aggregate demand/supply, although their values were not significant. Households only felt significant direct effects at the level of their receipts (social benefits, including social transfers in kind, and miscellaneous current transfers) in the case of changes in their current transfers (to government).

Except for the capital transfers from households to central and local government, which are of little importance, almost all the studied effects had the same mathematical sign as the initial change. Generally speaking, the differences between the values when considering that the households' expenditure structure did not change or that it changed exactly as it had done from 1998 to 1999 were not significant, meaning that the difference between the static and the comparative static analysis was not significant.

Therefore, changes in the flows of funds between government and households, most notably in current transfers, will contribute not only towards stimulating the same flows, but also towards stimulating the economy in general, through the direct impact of these changes on final consumption.

This study would have been more interesting if the households were disaggregated at some level, for instance, if the poor households could be identified. The research recently undertaken by the author has been geared towards this particular aspect, although as yet without any concrete results.

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APPENDIXES

A. Social Accounting Matrices (SAMs)

Portugal 1998 (in millions of euros)

Incomes(Receipts) \ Outlays (Expenditures)				INSTITUTIONS														
				Current Account							Capital Account							
				Households	Enterprises	Gov(Central)	Gov(Local)	Gov(SSF)	Others	Sum	Households	Enterprises	Gov(Central)	Gov(Local)	Gov(SSF)	Others	Sum
				1	2	3	4	5	6		7	8	9	10	11	12	
INSTITUTIONS	Current Account	Households	1	482	1578	11567	898	11048	3958	29532	0	0	0	0	0	0	0
		Enterprises	2	0	123	1	5	0	465	594	0	0	0	0	0	0	0
		Gov(Central)	3	5840	2854	5855	8	672	498	15727	0	0	0	0	0	0	0
		Gov(Local)	4	234	241	922	460	11	46	1913	0	0	0	0	0	0	0
		Gov(SSF)	5	3661	24	1901	0	0	0	5587	0	0	0	0	0	0	0
		Others	6	1630	483	568	167	474	115	3437	0	0	0	0	0	0	0
		Sum		11847	5303	20815	1536	12205	5083	56789	0	0	0	0	0	0	0
	Capital Account	Households	7	6667	0	0	0	0	0	6667	0	0	217	21	0	220	459
		Enterprises	8	0	10572	0	0	0	0	10572	0	0	1171	115	6	0	1292
		Gov(Central)	9	0	0	-2	0	0	0	-2	84	30	1175	12	599	4	1904
		Gov(Local)	10	0	0	0	467	0	0	467	8	27	1677	170	0	4	1886
		Gov(SSF)	11	0	0	0	0	784	0	784	0	0	27	0	0	0	27
		Others	12	0	0	0	0	0	2315	2315	0	0	287	81	52	220	640
		Sum		6667	10572	-2	467	784	2315	20804	92	57	4553	399	657	449	6208
PRODUCTION	Factors of Production	Labour	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Capital	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Sum		0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Activities	Primary	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Secondary	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Tertiary	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Sum		0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Products	Primary	18	2884	0	0	0	0	0	2884	187	151	0	0	0	0	338
		Secondary	19	34331	0	712	141	19	0	35202	6291	12538	1871	2055	49	1394	24198
		Tertiary	20	35229	0	4430	2125	277	0	42062	1002	2216	4	4	0	212	3438
		Sum		72444	0	5142	2266	297	0	80149	7480	14905	1875	2060	49	1606	27975
REST OF THE WORLD			21	2150	54	611	0	46	108	2969	-924	966	100	4	0	-26	120
Errors and Omissions			22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL				93108	15930	26566	4270	13332	7506	160711	6648	15928	6529	2463	706	2029	34303

Source: Portuguese National Accounts

Portugal 1998 (in millions of euros) (continued)

Incomes(Receipts) \ Outlays (Expenditures)				PRODUCTION											REST OF THE WORLD	Errors and Omissions	TOTAL
				Factors of Production			Activities				Products						
				Labour	Capital	Sum	Primary	Secondary	Tertiary	Sum	Primary	Secondary	Tertiary	Sum			
				13	14		15	16	17		18	19	20		21	22	
INSTITUTIONS	Current Account	Households	1	37965	22157	60121	0	0	0	0	0	0	0	0	3455	0	93108
		Enterprises	2	1578	13737	15315	0	0	0	0	0	0	0	0	20	0	15930
		Gov(Central)	3	701	-1571	-870	-157	-120	-338	-616	-223	8954	3409	12140	185	0	26566
		Gov(Local)	4	47	888	935	106	81	228	415	-18	728	277	987	19	0	4270
		Gov(SSF)	5	6858	100	6958	-103	-79	-221	-403	-9	350	133	475	716	0	13332
		Others	6	1186	2806	3992	0	0	0	0	0	0	0	0	77	0	7506
		Sum		48335	38116	86451	-154	-118	-332	-604	-250	10032	3820	13602	4473	0	160711
	Capital Account	Households	7	0	0	0	0	0	0	0	0	0	0	0	196	-675	6648
		Enterprises	8	0	0	0	0	0	0	0	0	0	0	0	1152	2911	15928
		Gov(Central)	9	0	0	0	0	0	0	0	0	0	0	0	897	3729	6529
		Gov(Local)	10	0	0	0	0	0	0	0	0	0	0	0	514	-404	2463
		Gov(SSF)	11	0	0	0	0	0	0	0	0	0	0	0	20	-125	706
		Others	12	0	0	0	0	0	0	0	0	0	0	0	3	-928	2029
		Sum		0	0	0	0	0	0	0	0	0	0	0	2782	4508	34303
PRODUCTION	Factors of Production	Labour	13	0	0	0	652	14895	32718	48266	0	0	0	0	153	0	48419
		Capital	14	0	0	0	3093	12371	24086	39551	0	0	0	0	3989	0	43540
		Sum		0	0	0	3745	27266	56805	87816	0	0	0	0	4143	0	91959
	Activities	Primary	15	0	0	0	0	0	0	0	6048	318	23	6389	0	0	6389
		Secondary	16	0	0	0	0	0	0	0	0	84628	700	85328	0	0	85328
		Tertiary	17	0	0	0	0	0	0	0	5	222	100617	100844	0	0	100844
		Sum		0	0	0	0	0	0	0	6053	85168	101340	192561	0	0	192561
	Products	Primary	18	0	0	0	599	4754	500	5853	0	0	0	0	261	0	9336
		Secondary	19	0	0	0	1860	46203	15766	63829	0	0	0	0	23136	0	146366
		Tertiary	20	0	0	0	353	7233	28135	35721	0	0	0	0	7739	0	88960
		Sum		0	0	0	2812	58190	44401	105403	0	0	0	0	31136	0	244662
REST OF THE WORLD			21	84	5424	5508	-14	-11	-30	-54	2142	33598	2759	38499	0	0	47042
Errors and Omissions			22	0	0	0	0	0	0	0	1391	17568	-18959	0	4508	0	4508
TOTAL				48419	43540	91959	6389	85328	100844	192561	9336	146366	88960	244662	47042	4508	X

Source: Portuguese National Accounts

Portugal 1999 (in millions of euros)

Incomes(Receipts) \ Outlays (Expenditures)				INSTITUTIONS														
				Current Account							Capital Account							
				Households	Enterprises	Gov(Central)	Gov(Local)	Gov(SSF)	Others	Sum	Households	Enterprises	Gov(Central)	Gov(Local)	Gov(SSF)	Others	Sum
				1	2	3	4	5	6		7	8	9	10	11	12	
INSTITUTIONS	Current Account	Households	1	520	1550	12803	1017	11993	4053	31936	0	0	0	0	0	0	0
		Enterprises	2	0	134	2	1	0	517	653	0	0	0	0	0	0	0
		Gov(Central)	3	6240	3458	6619	8	698	603	17627	0	0	0	0	0	0	0
		Gov(Local)	4	283	310	1133	397	12	57	2192	0	0	0	0	0	0	0
		Gov(SSF)	5	3991	22	2180	0	0	0	6193	0	0	0	0	0	0	0
		Others	6	1650	507	599	209	541	115	3622	0	0	0	0	0	0	0
		Sum		12685	5981	23336	1632	13244	5345	62222	0	0	0	0	0	0	0
	Capital Account	Households	7	5915	0	0	0	0	0	5915	0	0	236	23	0	313	572
		Enterprises	8	0	11399	0	0	0	0	11399	0	0	1150	133	0	0	1282
		Gov(Central)	9	0	0	-106	0	0	0	-106	95	31	1300	12	610	3	2051
		Gov(Local)	10	0	0	0	737	0	0	737	8	24	1553	199	0	4	1787
		Gov(SSF)	11	0	0	0	0	773	0	773	0	36	30	0	0	0	66
		Others	12	0	0	0	0	0	2425	2425	0	0	195	87	62	313	657
		Sum		5915	11399	-106	737	773	2425	21143	103	91	4463	454	671	633	6416
PRODUCTION	Factors of Production	Labour	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Capital	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Sum		0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Activities	Primary	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Secondary	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Tertiary	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Sum		0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Products	Primary	18	2942	0	0	0	0	0	2942	219	133	0	0	0	0	352
		Secondary	19	36680	0	786	158	22	0	37646	6725	13601	2085	2297	63	1453	26224
		Tertiary	20	38732	0	4846	2386	312	0	46276	1241	2564	17	18	1	168	4009
		Sum		78353	0	5631	2545	335	0	86864	8185	16298	2102	2315	64	1621	30585
REST OF THE WORLD			21	2261	62	727	0	55	59	3165	-982	1031	58	-5	4	31	137
Errors and Omissions			22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL				99214	17443	29588	4914	14407	7828	173394	7305	17420	6623	2765	739	2285	37138

Source: Portuguese National Accounts

Portugal 1999 (in millions of euros) (continued)

Incomes(Receipts) \ Outlays (Expenditures)				PRODUCTION											REST OF THE WORLD	Errors and Omissions	TOTAL
				Factors of Production			Activities				Products						
				Labour	Capital	Sum	Primary	Secondary	Tertiary	Sum	Primary	Secondary	Tertiary	Sum			
				13	14		15	16	17		18	19	20		21	22	
INSTITUTIONS	Current Account	Households	1	41242	22389	63631	0	0	0	0	0	0	0	0	3647	0	99214
		Enterprises	2	1550	15229	16779	0	0	0	0	0	0	0	0	11	0	17443
		Gov(Central)	3	739	-1655	-916	-174	-171	-413	-758	-229	9596	3968	13334	302	0	29588
		Gov(Local)	4	51	988	1039	106	103	251	459	-21	863	357	1199	24	0	4914
		Gov(SSF)	5	7385	109	7494	-122	-120	-291	-533	-8	354	146	492	762	0	14407
		Others	6	1154	2971	4125	0	0	0	0	0	0	0	0	81	0	7828
		Sum		52120	40032	92152	-191	-187	-454	-832	-258	10813	4471	15025	4827	0	173394
	Capital Account	Households	7	0	0	0	0	0	0	0	0	0	0	0	266	552	7305
		Enterprises	8	0	0	0	0	0	0	0	0	0	0	0	1019	3719	17420
		Gov(Central)	9	0	0	0	0	0	0	0	0	0	0	0	1160	3519	6623
		Gov(Local)	10	0	0	0	0	0	0	0	0	0	0	0	523	-283	2765
		Gov(SSF)	11	0	0	0	0	0	0	0	0	0	0	0	36	-137	739
		Others	12	0	0	0	0	0	0	0	0	0	0	0	4	-800	2285
		Sum		0	0	0	0	0	0	0	0	0	0	0	3009	6570	37138
PRODUCTION	Factors of Production	Labour	13	0	0	0	650	15691	35751	52092	0	0	0	0	147	0	52239
		Capital	14	0	0	0	3142	12740	25734	41615	0	0	0	0	3975	0	45590
		Sum		0	0	0	3792	28431	61484	93707	0	0	0	0	4122	0	97829
	Activities	Primary	15	0	0	0	0	0	0	0	6196	362	26	6584	0	0	6584
		Secondary	16	0	0	0	0	0	0	0	0	87369	763	88133	0	0	88133
		Tertiary	17	0	0	0	0	0	0	0	8	281	108609	108898	0	0	108898
		Sum		0	0	0	0	0	0	0	6204	88012	109398	203614	0	0	203614
	Products	Primary	18	0	0	0	751	4549	502	5802	0	0	0	0	269	0	9364
		Secondary	19	0	0	0	1846	47615	16703	66165	0	0	0	0	23798	0	153833
		Tertiary	20	0	0	0	400	7739	30696	38835	0	0	0	0	8023	0	97143
		Sum		0	0	0	2997	59903	47901	110801	0	0	0	0	32089	0	260340
REST OF THE WORLD			21	119	5559	5678	-14	-14	-34	-63	1936	36829	2936	41700	0	0	50617
Errors and Omissions			22	0	0	0	0	0	0	0	1482	18179	-19662	0	6570	0	6570
TOTAL				52239	45590	97829	6584	88133	108898	203614	9364	153833	97143	260340	50617	6570	X

Source: Portuguese National Accounts

B. Description of the SAM cell contents

Row	Col.	Contents
1	1	Social benefits other than social transfers in kind and miscellaneous current transfers within households
1	2	Social benefits other than social transfers in kind and miscellaneous current transfers from non-financial corporations to households
1	3	Social benefits other than social transfers in kind, social transfers in kind and miscellaneous current transfers from central government to households
1	4	Social benefits other than social transfers in kind, social transfers in kind and miscellaneous current transfers from local government to households
1	5	Social benefits other than social transfers in kind and social transfers in kind paid from social security funds to households
1	6	Social benefits other than social transfers in kind received by households from financial corporations and non-profit institutions serving households; social transfers in kind from non-profit institutions serving households to households; non-life insurance claims from financial corporations to households; adjustment for the change in the net equity of households in pension funds
1	13	Wages and salaries plus imputed social contributions received by households
1	14	Gross mixed income plus net property income received by households
1	21	Social benefits other than social transfers in kind, non-life insurance claims and miscellaneous current transfers received by households from the rest of the world
2	2	Miscellaneous current transfers within non-financial corporations
2	3	Miscellaneous current transfers from central government to non-financial corporations
2	4	Miscellaneous current transfers from local government to non-financial corporations
2	6	Non-life insurance claims and miscellaneous current transfers from financial corporations to non-financial corporations
2	13	Imputed social contributions received by non-financial corporations
2	14	Gross operating surplus plus net property income received by non-financial corporations
2	21	Non-life insurance claims received by non-financial corporations from the rest of the world
3	1	Current taxes on income, wealth, etc., employees' social contributions, social contributions by self-employed and non-employed persons and miscellaneous current transfers received by central government from households
3	2	Current taxes on income, wealth, etc., and miscellaneous current transfers received by central government from non-financial corporations
3	3	Current transfers and miscellaneous current transfers within central government
3	4	Current transfers and miscellaneous current transfers from local government to central government
3	5	Current transfers and miscellaneous current transfers from social security funds to central government
3	6	Current taxes on income, wealth, etc. paid by financial corporations and non-profit institutions serving households to central government; non-life insurance claims paid by financial corporations to central government; miscellaneous current transfers from financial corporations and non-profit institutions serving households to central government
3	13	Imputed social contributions received by central government
3	14	Gross operating surplus plus net property income received by central government

Row	Col.	Contents
3	15	Other taxes on production paid by primary sector activities minus other subsidies on production received by the same activities from central government
3	16	Other taxes on production paid by secondary sector activities minus other subsidies on production received by the same activities from central government
3	17	Other taxes on production paid by tertiary sector activities minus other subsidies on production received by the same activities from central government
3	18	Taxes on primary sector products received by the central government minus subsidies on those products from central government
3	19	Taxes on secondary sector products received by central government minus subsidies on those products from the central government
3	20	Taxes on tertiary sector products received by central government minus subsidies on those products from central government
3	21	Current international cooperation and miscellaneous current transfers received by central government from the rest of the world
4	1	Current taxes on income, wealth, etc., employees' social contributions, social contributions by self-employed and non-employed persons and miscellaneous current transfers received by local government from households
4	2	Current taxes on income, wealth, etc., and miscellaneous current transfers received by local government from non-financial corporations
4	3	Current transfers from central government to local government
4	4	Current transfers within local government
4	5	Current transfers from social security funds to local government
4	6	Current taxes on income, wealth, etc. paid by financial corporations and non-profit institutions serving households to local government; non-life insurance claims paid by financial corporations to local government; miscellaneous current transfers from financial corporations and non-profit institutions serving households to local government
4	13	Imputed social contributions received by local government
4	14	Gross operating surplus plus net property income received by local government
4	15	Other taxes on production paid by primary sector activities minus other subsidies on production received by the same activities from local government
4	16	Other taxes on production paid by secondary sector activities minus other subsidies on production received by the same activities from local government
4	17	Other taxes on production paid by tertiary sector activities minus other subsidies on production received by the same activities from local government
4	18	Taxes on primary sector products received by local government minus subsidies on those products from local government
4	19	Taxes on secondary sector products received by local government minus subsidies on those products from local government
4	20	Taxes on tertiary sector products received by local government minus subsidies on those products from local government
4	21	Current international cooperation and miscellaneous current transfers received by local government from the rest of the world
5	1	Employees' social contributions, social contributions by self-employed and non-employed persons and miscellaneous current transfers received by social security funds from households
5	2	Miscellaneous current transfers from non-financial corporations to social security funds
5	3	Current transfers from central government to social security funds
5	13	Imputed social contributions plus employers' actual social contributions received by

Row	Col.	Contents
		social security funds
5	14	Gross operating surplus plus net property income received by social security funds
5	15	Other taxes on production paid by primary sector activities minus other subsidies on production received by the same activities from social security funds
5	16	Other taxes on production paid by secondary sector activities minus other subsidies on production received by the same activities from social security funds
5	17	Other taxes on production paid by tertiary sector activities minus other subsidies on production received by the same activities from social security funds
5	18	Taxes on primary sector products received by social security funds
5	19	Taxes on secondary sector products received by social security funds
5	20	Taxes on tertiary sector products received by social security funds
5	21	Current international cooperation received by social security funds from the rest of the world
6	1	Employees' social contributions, social contributions by self-employed and non-employed persons and net non-life insurance premiums received by financial corporations from households; miscellaneous current transfers from households to non-profit institutions serving households
6	2	Net non-life insurance premiums received by financial corporations from non-financial corporations; miscellaneous current transfers from non-financial corporations to financial corporations and non-profit institutions serving households
6	3	Net non-life insurance premiums received by financial corporations from central government; miscellaneous current transfers from central government to non-profit institutions serving households
6	4	Net non-life insurance premiums received by financial corporations from local government; miscellaneous current transfers from local government to non-profit institutions serving households
6	5	Miscellaneous current transfers from social security funds to non-profit institutions serving households
6	6	Net non-life insurance premiums paid by financial corporations and non-profit institutions serving households to financial corporations; non-life insurance claims paid by financial corporations to themselves and to non-profit institutions serving households; miscellaneous current transfers from financial corporations to non-profit institutions serving households and within the latter
6	13	Imputed social contributions received by financial corporations and non-profit institutions serving households
6	14	Gross operating surplus plus net property income received by financial corporations and non-profit institutions serving households
6	21	Net non-life insurance premiums and non-life insurance claims received by financial corporations from the rest of the world
7	1	Gross savings of households
7	9	Investment grants from central government to households
7	10	Investment grants and other capital transfers from local government to households
7	12	Other capital transfers from financial corporations to households
7	21	Investment grants and other capital transfers from the rest of the world to households
7	22	Net lending (-) / borrowing (+) of households
8	2	Gross savings of non-financial corporations
8	9	Investment grants and other capital transfers from central government to non-financial corporations
8	10	Investment grants and other capital transfers from local government to non-financial corporations

Row	Col.	Contents
8	11	Other capital transfers from social security funds to non-financial corporations
8	21	Investment grants and other capital transfers from the rest of the world to non-financial corporations
8	22	Net borrowing of non-financial corporations
9	3	Gross savings of central government
9	7	Capital taxes and other capital transfers received by central government from households
9	8	Other capital transfers from non-financial corporations to central government
9	9	Investment grants within central government
9	10	Investment grants from local government to central government
9	11	Investment grants and other capital transfers from social security funds to central government
9	12	Other capital transfers from financial corporations and non-profit institutions serving households to central government
9	21	Investment grants and other capital transfers from the rest of the world to central government
9	22	Net borrowing of central government
10	4	Gross savings of local government
10	7	Capital taxes and other capital transfers received by local government from households
10	8	Other capital transfers from non-financial corporations to local government
10	9	Investment grants and other capital transfers from central government to local government
10	10	Investment grants within local government
10	12	Other capital transfers from financial corporations and non-profit institutions serving households to local government
10	21	Investment grants and other capital transfers from the rest of the world to local government
10	22	Net lending of local government
11	5	Gross savings of social security funds
11	8	Other capital transfers from non-financial corporations to social security funds
11	9	Investment grants from central government to social security funds
11	21	Investment grants and other capital transfers from the rest of the world to social security funds
11	22	Net lending of social security funds
12	6	Gross savings of financial corporations and non-profit institutions serving households
12	9	Investment grants from central government to non-profit institutions serving households
12	10	Investment grants and other capital transfers from local government to non-profit institutions serving households
12	11	Investment grants from social security funds to non-profit institutions serving households
12	12	Other capital transfers within financial corporations
12	21	Investment grants from the rest of the world to non-profit institutions serving households
12	22	Net lending of financial corporations and non-profit institutions serving households
13	15	Compensation of employees paid by primary sector activities
13	16	Compensation of employees paid by secondary sector activities
13	17	Compensation of employees paid by tertiary sector activities

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13	21	Compensation of employees paid by the rest of the world (from non-resident employers)
14	15	Gross operating surplus of primary sector activities
14	16	Gross operating surplus of secondary sector activities
14	17	Gross operating surplus of tertiary sector activities
14	21	Property income paid by the rest of the world
15	18	Output of primary sector products through the activities of the same sector
15	19	Output of secondary sector products through primary sector activities
15	20	Output of tertiary sector products through primary sector activities
16	19	Output of secondary sector products through the activities of the same sector
16	20	Output of tertiary sector products through secondary sector activities
17	18	Output of primary sector products through tertiary sector activities
17	19	Output of secondary sector products through tertiary sector activities
17	20	Output of tertiary sector products through the activities of the same sector
18	1	Households' actual final consumption of primary sector products
18	7	Gross Capital Formation on primary sector products by enterprises classified in the household institutional sector
18	8	Gross Capital Formation on primary sector products by non-financial corporations
18	15	Intermediate consumption of primary sector products through the activities of the same sector
18	16	Intermediate consumption of primary sector products through secondary sector activities
18	17	Intermediate consumption of primary sector products through tertiary sector activities
18	21	Exports of primary sector products
19	1	Households' actual final consumption of secondary sector products
19	3	Central government actual final consumption of secondary sector products
19	4	Local government actual final consumption of secondary sector products
19	5	Social security funds' actual final consumption of secondary sector products
19	7	Gross Capital Formation on secondary sector products by enterprises classified in the household institutional sector
19	8	Gross Capital Formation on secondary sector products by non-financial corporations
19	9	Gross Capital Formation on secondary sector products by central government
19	10	Gross Capital Formation on secondary sector products by local government
19	11	Gross Capital Formation on secondary sector products by social security funds
19	12	Gross Capital Formation on secondary sector products by financial corporations and non-profit institutions serving households
19	15	Intermediate consumption of secondary sector products through primary sector activities
19	16	Intermediate consumption of secondary sector products through the activities of the same sector
19	17	Intermediate consumption of secondary sector products through tertiary sector activities
19	21	Exports of secondary sector products
20	1	Households' actual final consumption of tertiary sector products
20	3	Central government actual final consumption of tertiary sector products
20	4	Local government actual final consumption of tertiary sector products
20	5	Social security funds' actual final consumption of tertiary sector products
20	7	Gross Capital Formation on tertiary sector products by the enterprises classified in the household institutional sector

Row	Col.	Contents
20	8	Gross Capital Formation on tertiary sector products by non-financial corporations
20	9	Gross Capital Formation on tertiary sector products by central government
20	10	Gross Capital Formation on tertiary sector products by local government
20	11	Gross Capital Formation on tertiary sector products by social security funds
20	12	Gross Capital Formation on tertiary sector products by financial corporations and non-profit institutions serving households
20	15	Intermediate consumption of tertiary sector products by primary sector activities
20	16	Intermediate consumption of tertiary sector products by secondary sector activities
20	17	Intermediate consumption of tertiary sector products by the activities of the same sector
20	21	Exports of tertiary sector products (includes direct purchases in the domestic market by non-residents and the c.i.f./f.o.b. adjustment)
21	1	Net non-life insurance premiums and miscellaneous current transfers received by the rest of the world from households; direct purchases abroad by residents
21	2	Net non-life insurance premiums received by the rest of the world from non-financial corporations
21	3	Net non-life insurance premiums, current international cooperation and miscellaneous current transfers received by the rest of the world from central government
21	5	Social benefits other than social transfers in kind received by the rest of the world from social security funds
21	6	Net non-life insurance premiums received by the rest of the world from financial corporations and non-profit institutions serving households; non-life insurance claims received by the rest of the world from financial corporations
21	7	Acquisitions minus disposals of non-produced non-financial assets and other capital transfers from households to the rest of the world
21	8	Acquisitions minus disposals of non-produced non-financial assets and other capital transfers from non-financial corporations to the rest of the world
21	9	Acquisitions minus disposals of non-produced non-financial assets, investment grants and other capital transfers from central government to the rest of the world
21	10	Acquisitions minus disposals of non-produced non-financial assets from local government to the rest of the world
21	11	Acquisitions minus disposals of non-produced non-financial assets from social security funds to the rest of the world
21	12	Acquisitions minus disposals of non-produced non-financial assets from financial corporations to the rest of the world
21	13	Compensation of employees received by the rest of the world (paid to non-resident employees)
21	14	Property income received by the rest of the world
21	15	(minus) Other subsidies on production received by primary sector activities from the institutions and other countries of the European Union
21	16	(minus) Other subsidies on production received by secondary sector activities from the institutions and other countries of the European Union
21	17	(minus) Other subsidies on production received by tertiary sector activities from the institutions and other countries of the European Union
21	18	Imports of primary sector products plus the part of taxes on those products received by the institutions of the European Union minus the part of the subsidies for those products from the same institutions
21	19	Imports of secondary sector products plus the part of taxes on those products received by the institutions of the European Union minus the part of the subsidies for

Row	Col.	Contents
		those products received from the same institutions
21	20	Imports of tertiary sector products plus the part of taxes on those products received by the institutions of the European Union minus the part of the subsidies for those products received from the same institutions
22	18	Trade margins of primary sector products
22	19	Trade margins of secondary sector products
22	20	Trade margins of tertiary sector products
22	21	Net lending of the rest of the world /Net borrowing of the Portuguese economy

C. The SAM modelling

C.1. Methodology

In keeping with the work of G. Pyatt and A. Roe (1977) and G. Pyatt and J. Round (1985), which represents the basis of what has so far been done in this area, the adopted base methodology of the multipliers is described below.

SAM in endogenous and exogenous accounts

		Expenditures				
		Endogenous	Sum	Exogenous	Sum	Total
Receipts	Endogenous	N	n	X	x	y_n
	Exogenous	L	l	R	r	y_x
	Total	y'_n		y'_x		

where:

N = matrix of transactions between endogenous accounts
n = vector of the row sum of N

X = matrix of the transactions between exogenous and endogenous accounts (injections from first into second)
x = vector of the row sum of X

L = matrix of the transactions between endogenous and exogenous accounts (leakages from first into second)
l = vector of the row sum of L

R = matrix of the transactions between exogenous accounts

r = vector of the row sum of R

y_n = vector (column) of the receipts of the endogenous accounts

y_n' = " (row) of the expenditure " " " "

$\hat{y}_n$ = matrix (diagonal) of the receipts " " " "

($\hat{y}_n^{-1}$: inverse)

y_x = vector (column) of the receipts of the exogenous accounts

y_x' = " (row) of the expenditure " " " "

It can be written that:

$$y_n = n + x \quad (1)$$

$$y_x = l + r \quad (2)$$

The amount that the endogenous accounts receive is equal to the amount that they spend. In other words, in aggregate terms, total injections from the exogenous into the endogenous accounts, i.e. the column sum of "x", are equal to total leakages from the endogenous into the exogenous accounts, i.e. considering i' to be the unitary vector (row), the column sum of "1" is:

$$x * i' = l * i' \quad (3)$$

a) Deduction of accounting multipliers

If the former table shows the structure of a SAM for a year *t* (1999 in this study) and the entries in the N matrix are divided by the corresponding total expenditure, a corresponding matrix (squared) can be established of the average expenditure propensities of the endogenous accounts in the endogenous accounts or of the use of resources within those accounts. Calling this matrix A_n, it can be written that:

$$A_n = N * \hat{y}_n^{-1} \quad (4)$$

$$N = A_n * \hat{y}_n \quad (5)$$

Considering equation (1), $y_n = A_n * y_n + x$ (6)

Thus, $y_n = (I-A_n)^{-1} * x = M_a * x.$ (7)

We thus have the equation that gives the total receipts of the endogenous accounts (y_n), by multiplying the injections "x" by the matrix of the accounting multipliers:

$$M_a = (I-A_n)^{-1}. \quad (8)$$

On the other hand, if the entries in the L matrix are divided by the corresponding total expenditure, a corresponding matrix (usually non-squared) can be established of the average expenditure

propensities of the endogenous accounts in the exogenous accounts or of the use of resources from the endogenous accounts within the exogenous accounts. Calling this matrix A_l, it can be written that:

$$A_l = L_* \hat{y}_n^{-1} \quad (9)$$

$$L = A_{l*} \hat{y}_n \quad (10)$$

Considering equation (2), $y_x = A_{l*} y_n + r$ (11)

Thus, $l = A_l * y_n = A_l * (I-A_n)^{-1} * x = A_l * M_a * x.$ (12)

So, with the accounting multipliers, the impact of changes in receipts is analysed at the moment that they occur, assuming that the expenditure structure of the economy does not change. This type of methodology allows for a static analysis to be made, assuming that there is excess capacity, prices remain constant and that production technology and resource endowment are given.

b) Deduction of fixed-price multipliers

If the former table shows the structure of a SAM which is the difference between the SAMs for a year *t* and a year *t-1* (1999 and 1998 in this study) and the entries in the N matrix are divided by the corresponding column total, a corresponding matrix (squared) can be established of the marginal expenditure propensities of the endogenous accounts in the endogenous accounts or of the use of resources within those accounts. Calling this matrix D_n, it can be written that:

$$D_n = N_* \hat{y}_n^{-1} \quad (13)$$

$$N = D_{n*} \hat{y}_n \quad (14)$$

Considering equation (1), $y_n = D_{n*} y_n + x$ (15)

Thus, $y_n = (I-D_n)^{-1} * x = M_{fp} * x.$ (16)

We thus have the equation that gives the total changes in the receipts of the endogenous accounts (y_n), by multiplying the changes in injections "x" by the matrix of the fixed-price multipliers:

$$M_{fp} = (I-D_n)^{-1}. \quad (17)$$

On the other hand, if the entries in the L matrix are divided by the corresponding column total, a corresponding matrix (usually non-squared) can be established of the marginal expenditure propensities of the endogenous accounts in the exogenous accounts or of the use of resources from the endogenous accounts within the exogenous accounts. Calling this matrix D_l, it can be written that:

$$D_l = L_* \hat{y}_n^{-1} \quad (18)$$

$$L = D_{l*} \hat{y}_n \quad (19)$$

Considering equation (2), $y_x = D_l * y_n + r$ (20)

Thus, $l = D_l * y_n = D_l * (I-D_n)^{-1} * x = D_l * M_{fp} * x.$ (21)

So, with the fixed-price multipliers, the impact of changes in receipts is analysed at the moment (year *t,* 1999 in this study), assuming that the expenditure structure of the economy changed exactly as it did in relation to the previous year (*t*-1, 1998 in this study). This type of methodology allows for a comparative static analysis to be made, assuming that there is excess capacity, prices remain constant and that production technology and resource endowment are given.

C.2. Results

a) **Effects of changes in flows of funds from government to households**

Average expenditure propensities of the endogenous accounts in the endogenous accounts (A_n)

	1	2	6	7	8	12	13	14	15	16	17	18	19	20	21	22
1	0.005	0.089	0.518	0.000	0.000	0.000	0.789	0.491	0.000	0.000	0.000	0.000	0.000	0.000	0.072	0.000
2	0.000	0.008	0.066	0.000	0.000	0.000	0.030	0.334	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.017	0.029	0.015	0.000	0.000	0.000	0.022	0.065	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000
7	0.060	0.000	0.000	0.000	0.000	0.137	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.084
8	0.000	0.654	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.566
12	0.000	0.000	0.310	0.000	0.000	0.137	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.122
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.099	0.178	0.328	0.000	0.000	0.000	0.003	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.477	0.145	0.236	0.000	0.000	0.000	0.079	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.662	0.002	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.568	0.008	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	1.118	0.000	0.000
18	0.030	0.000	0.000	0.030	0.008	0.000	0.000	0.000	0.114	0.052	0.005	0.000	0.000	0.000	0.005	0.000
19	0.370	0.000	0.000	0.921	0.781	0.636	0.000	0.000	0.280	0.540	0.153	0.000	0.000	0.000	0.470	0.000
20	0.390	0.000	0.000	0.170	0.147	0.073	0.000	0.000	0.061	0.088	0.282	0.000	0.000	0.000	0.159	0.000
21	0.023	0.004	0.008	-0.134	0.059	0.014	0.002	0.122	-0.002	0.000	0.000	0.207	0.239	0.030	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.158	0.118	-0.202	0.130	0.000

Average expenditure propensities of the endogenous accounts in the exogenous accounts (A_l)

3	0.063	0.198	0.077	0.000	0.000	0.000	0.014	-0.036	-0.026	-0.002	-0.004	-0.024	0.062	0.041	0.006	0.000
4	0.003	0.018	0.007	0.000	0.000	0.000	0.001	0.022	0.016	0.001	0.002	-0.002	0.006	0.004	0.000	0.000
5	0.040	0.001	0.000	0.000	0.000	0.000	0.141	0.002	-0.019	-0.001	-0.003	-0.001	0.002	0.002	0.015	0.000
9	0.000	0.000	0.000	0.013	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.536
10	0.000	0.000	0.000	0.001	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	-0.043
11	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	-0.021
(An + Al)																
Total	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Source: Social Accounting Matrix – Portugal, 1999 (Appendix A)

Marginal expenditure propensities of the endogenous accounts in the endogenous accounts (D_n)

	1	2	6	7	8	12	13	14	15	16	17	18	19	20	21	22
1	0.006	-0.019	0.295	0.000	0.000	0.000	0.858	0.113	0.000	0.000	0.000	0.000	0.000	0.000	0.054	0.000
2	0.000	0.007	0.160	0.000	0.000	0.000	-0.007	0.728	0.000	0.000	0.000	0.000	0.000	0.000	-0.003	0.000
6	0.003	0.016	-0.002	0.000	0.000	0.000	-0.008	0.081	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
7	-0.123	0.000	0.000	0.000	0.000	0.362	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.595
8	0.000	0.547	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.037	0.392
12	0.000	0.000	0.339	0.000	0.000	0.362	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.062
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.010	0.284	0.377	0.000	0.000	0.000	-0.002	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.251	0.131	0.205	0.000	0.000	0.000	-0.004	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.361	0.006	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.367	0.008	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.093	0.008	0.977	0.000	0.000
18	0.009	0.000	0.000	0.049	-0.012	0.000	0.000	0.000	0.779	-0.073	0.000	0.000	0.000	0.000	0.002	0.000
19	0.385	0.000	0.000	0.659	0.712	0.233	0.000	0.000	-0.070	0.504	0.116	0.000	0.000	0.000	0.185	0.000
20	0.574	0.000	0.000	0.365	0.234	-0.174	0.000	0.000	0.241	0.180	0.318	0.000	0.000	0.000	0.079	0.000
21	0.018	0.005	-0.151	-0.088	0.043	0.222	0.009	0.066	-0.003	-0.001	-0.001	-7.431	0.433	0.022	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.292	0.082	-0.086	0.577	0.000

Marginal expenditure propensities of the endogenous accounts in the exogenous accounts (D_l)

3	0.066	0.399	0.326	0.000	0.000	0.000	0.010	-0.041	-0.087	-0.018	-0.009	-0.234	0.086	0.068	0.033	0.000
4	0.008	0.046	0.034	0.000	0.000	0.000	0.001	0.049	-0.002	0.008	0.003	-0.090	0.018	0.010	0.001	0.000
5	0.054	-0.002	0.000	0.000	0.000	0.000	0.138	0.005	-0.100	-0.015	-0.009	0.009	0.001	0.002	0.013	0.000
9	0.000	0.000	0.000	0.017	0.001	-0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.073	-0.102
10	0.000	0.000	0.000	-0.001	-0.002	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.059
11	0.000	0.000	0.000	0.000	0.024	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	-0.006
(Dn + Dl)																
Total	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Source: Social Accounting Matrices – Portugal, 1998 and 1999 (Appendix A)

Accounting Multipliers (M_a)

	1	2	6	7	8	12	13	14	15	16	17	18	19	20	21	22
1	2.625	1.341	1.969	1.577	1.583	1.552	2.159	2.056	1.937	1.763	2.043	1.739	1.482	2.175	1.561	0.840
2	0.388	1.307	0.412	0.381	0.381	0.374	0.355	0.699	0.554	0.428	0.484	0.476	0.358	0.515	0.373	0.202
6	0.151	0.134	1.145	0.132	0.132	0.129	0.149	0.209	0.178	0.147	0.169	0.156	0.124	0.179	0.129	0.070
7	0.180	0.106	0.192	1.126	0.128	0.285	0.150	0.153	0.148	0.136	0.145	0.146	0.126	0.140	0.133	0.132
8	0.363	1.001	0.404	0.442	1.450	0.454	0.326	0.598	0.535	0.458	0.413	0.582	0.474	0.318	0.487	0.803
12	0.033	0.017	0.383	0.005	0.004	1.159	0.035	0.046	0.027	0.014	0.042	-0.005	-0.009	0.075	-0.003	-0.139
13	1.162	0.875	1.023	1.127	1.120	1.100	1.969	1.056	1.213	1.265	1.516	1.111	1.041	1.616	1.031	0.595
14	1.018	0.784	0.906	1.006	1.006	0.988	0.849	1.942	1.503	1.128	1.269	1.285	0.947	1.350	0.991	0.534
15	0.156	0.119	0.139	0.170	0.153	0.152	0.130	0.142	1.229	0.181	0.146	0.854	0.149	0.152	0.136	0.082
16	1.975	1.774	1.917	2.372	2.328	2.371	1.659	1.931	2.114	3.168	1.951	2.007	2.431	2.019	1.995	1.228
17	2.412	1.660	2.025	2.086	2.092	2.007	2.003	2.115	2.167	2.068	3.504	2.027	1.797	3.770	2.000	1.115
18	0.223	0.169	0.197	0.241	0.216	0.214	0.186	0.202	0.332	0.260	0.208	1.278	0.209	0.216	0.193	0.117
19	3.448	3.102	3.351	4.152	4.074	4.150	2.896	3.373	3.696	3.792	3.405	3.509	4.258	3.508	3.487	2.149
20	2.152	1.480	1.806	1.859	1.864	1.789	1.787	1.886	1.932	1.844	2.234	1.806	1.600	3.366	1.783	0.993
21	1.122	1.000	1.067	1.137	1.307	1.255	0.944	1.211	1.254	1.208	1.137	1.373	1.274	1.207	2.099	0.683
22	0.153	0.224	0.200	0.300	0.308	0.325	0.133	0.206	0.261	0.273	0.131	0.430	0.378	-0.076	0.354	1.160

Source: Social Accounting Matrix – Portugal, 1999 (Appendix A)

Fixed-price multipliers (M_{fp})

	1	2	6	7	8	12	13	14	15	16	17	18	19	20	21	22
1	1.974	0.540	0.841	1.020	1.015	0.951	1.691	0.748	0.764	1.251	1.283	0.483	0.982	1.192	0.973	1.064
2	0.386	1.229	0.374	0.387	0.401	0.347	0.322	0.991	0.191	0.513	0.522	-0.185	0.379	0.487	0.350	0.409
6	0.048	0.042	1.027	0.045	0.047	0.042	0.033	0.121	0.025	0.059	0.060	-0.020	0.045	0.056	0.043	0.048
7	0.111	0.232	0.354	1.333	0.409	1.159	0.097	0.257	0.446	0.297	0.181	0.505	0.504	0.107	0.710	1.026
8	0.380	0.820	0.336	0.435	1.486	0.544	0.323	0.706	0.306	0.508	0.447	0.102	0.523	0.378	0.600	0.875
12	0.077	0.065	0.584	0.091	0.103	1.694	0.062	0.113	0.089	0.097	0.081	0.070	0.116	0.065	0.144	0.199
13	0.986	0.557	0.553	1.032	1.020	0.928	1.845	0.622	0.679	1.289	1.328	0.403	0.977	1.235	0.927	1.071
14	0.529	0.301	0.293	0.533	0.551	0.480	0.453	1.334	0.271	0.703	0.716	-0.233	0.522	0.667	0.486	0.563
15	0.047	0.052	0.025	-0.010	0.095	0.025	0.040	0.047	-0.286	0.192	0.049	-1.672	0.086	0.048	0.033	0.033
16	0.709	0.553	0.537	0.944	1.004	1.100	0.607	0.583	0.682	1.900	0.676	0.615	1.168	0.606	0.871	1.023
17	2.090	1.066	1.066	2.035	1.959	1.644	1.792	1.218	1.293	2.001	3.023	0.575	1.722	2.829	1.815	2.081
18	0.007	0.008	0.003	-0.005	0.015	0.001	0.006	0.007	-0.242	0.033	0.007	-0.314	0.013	0.007	0.004	0.003
19	1.886	1.483	1.440	2.528	2.693	2.962	1.616	1.562	1.830	2.409	1.799	1.664	3.144	1.591	2.334	2.744
20	2.124	1.079	1.080	2.063	1.983	1.659	1.822	1.234	1.332	2.027	2.056	0.605	1.736	2.883	1.839	2.108
21	0.909	0.668	0.621	1.151	1.207	1.656	0.789	0.776	2.648	0.929	0.865	3.043	1.362	0.789	2.070	1.261
22	0.518	0.440	0.394	0.678	0.794	1.059	0.449	0.492	0.765	0.668	0.493	0.806	0.935	0.361	1.239	1.781

Source: Social Accounting Matrices – Portugal, 1998 and 1999 (Appendix A)

b) **Effects of changes in flows of funds from households to government**

Average expenditure propensities of the endogenous accounts in the endogenous accounts (A_n)

	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
2	0.008	0.000	0.000	0.000	0.066	0.000	0.000	0.000	0.000	0.000	0.030	0.334	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.198	0.224	0.002	0.048	0.077	0.000	0.000	0.000	0.000	0.000	0.014	-0.036	-0.026	-0.002	-0.004	-0.024	0.062	0.041	0.006	0.000
4	0.018	0.038	0.081	0.001	0.007	0.000	0.000	0.000	0.000	0.000	0.001	0.022	0.016	0.001	0.002	-0.002	0.006	0.004	0.000	0.000
5	0.001	0.074	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.141	0.002	-0.019	-0.001	-0.003	-0.001	0.002	0.002	0.015	0.000
6	0.029	0.020	0.043	0.038	0.015	0.000	0.000	0.000	0.000	0.000	0.022	0.065	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000
8	0.654	0.000	0.000	0.000	0.000	0.000	0.174	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.566
9	0.000	-0.004	0.000	0.000	0.000	0.002	0.196	0.004	0.825	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.536
10	0.000	0.000	0.150	0.000	0.000	0.001	0.234	0.072	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	-0.043
11	0.000	0.000	0.000	0.054	0.000	0.002	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	-0.021
12	0.000	0.000	0.000	0.000	0.310	0.000	0.029	0.032	0.084	0.137	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.122
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.099	0.178	0.328	0.000	0.000	0.000	0.003	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.477	0.145	0.236	0.000	0.000	0.000	0.079	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.662	0.002	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.568	0.008	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	1.118	0.000	0.000
18	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.114	0.052	0.005	0.000	0.000	0.000	0.005	0.000
19	0.000	0.027	0.032	0.002	0.000	0.781	0.315	0.831	0.085	0.636	0.000	0.000	0.280	0.540	0.153	0.000	0.000	0.000	0.470	0.000
20	0.000	0.164	0.486	0.022	0.000	0.147	0.003	0.007	0.001	0.073	0.000	0.000	0.061	0.088	0.282	0.000	0.000	0.000	0.159	0.000
21	0.004	0.025	0.000	0.004	0.008	0.059	0.009	-0.002	0.006	0.014	0.002	0.122	-0.002	0.000	0.000	0.207	0.239	0.030	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.158	0.118	-0.202	0.130	0.000

Average expenditure propensities of the endogenous accounts in the exogenous accounts (A_l)

1	0.089	0.433	0.207	0.832	0.518	0.000	0.000	0.000	0.000	0.000	0.789	0.491	0.000	0.000	0.000	0.000	0.000	0.000	0.072	0.000
7	0.000	0.000	0.000	0.000	0.000	0.000	0.036	0.008	0.000	0.137	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.084

(An + Al)

Total	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Source: Social Accounting Matrix – Portugal, 1999 (Appendix A)

Marginal expenditure propensities of the endogenous accounts in the endogenous accounts (D_n)

	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
2	0.008	0.000	0.000	0.000	0.066	0.000	0.000	0.000	0.000	0.000	0.030	0.334	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.198	0.224	0.002	0.048	0.077	0.000	0.000	0.000	0.000	0.000	0.014	-0.036	-0.026	-0.002	-0.004	-0.024	0.062	0.041	0.006	0.000
4	0.018	0.038	0.081	0.001	0.007	0.000	0.000	0.000	0.000	0.000	0.001	0.022	0.016	0.001	0.002	-0.002	0.006	0.004	0.000	0.000
5	0.001	0.074	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.141	0.002	-0.019	-0.001	-0.003	-0.001	0.002	0.002	0.015	0.000
6	0.029	0.020	0.043	0.038	0.015	0.000	0.000	0.000	0.000	0.000	0.022	0.065	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000
8	0.654	0.000	0.000	0.000	0.000	0.000	0.174	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.566
9	0.000	-0.004	0.000	0.000	0.000	0.002	0.196	0.004	0.825	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.536
10	0.000	0.000	0.150	0.000	0.000	0.001	0.234	0.072	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	-0.043
11	0.000	0.000	0.000	0.054	0.000	0.002	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	-0.021
12	0.000	0.000	0.000	0.000	0.310	0.000	0.029	0.032	0.084	0.137	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.122
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.099	0.178	0.328	0.000	0.000	0.000	0.003	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.477	0.145	0.236	0.000	0.000	0.000	0.079	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.662	0.002	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.568	0.008	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	1.118	0.000	0.000
18	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.114	0.052	0.005	0.000	0.000	0.000	0.005	0.000
19	0.000	0.027	0.032	0.002	0.000	0.781	0.315	0.831	0.085	0.636	0.000	0.000	0.280	0.540	0.153	0.000	0.000	0.000	0.470	0.000
20	0.000	0.164	0.486	0.022	0.000	0.147	0.003	0.007	0.001	0.073	0.000	0.000	0.061	0.088	0.282	0.000	0.000	0.000	0.159	0.000
21	0.004	0.025	0.000	0.004	0.008	0.059	0.009	-0.002	0.006	0.014	0.002	0.122	-0.002	0.000	0.000	0.207	0.239	0.030	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.158	0.118	-0.202	0.130	0.000

Marginal expenditure propensities of the endogenous accounts in the exogenous accounts (D_l)

1	0.089	0.433	0.207	0.832	0.518	0.000	0.000	0.000	0.000	0.000	0.789	0.491	0.000	0.000	0.000	0.000	0.000	0.000	0.072	0.000
7	0.000	0.000	0.000	0.000	0.000	0.000	0.036	0.008	0.000	0.137	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.084

(An + Al)

Total	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Source: Social Accounting Matrices – Portugal, 1998 and 1999 (Appendix A)

Accounting Multipliers (M_a)

	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
2	1.148	0.065	0.145	0.023	0.132	0.183	0.171	0.177	0.170	0.153	0.042	0.415	0.294	0.195	0.196	0.256	0.180	0.196	0.182	0.165
3	0.459	1.363	0.160	0.094	0.214	0.269	0.268	0.284	0.266	0.233	0.052	0.150	0.150	0.208	0.141	0.154	0.290	0.172	0.234	0.249
4	0.068	0.068	1.120	0.009	0.032	0.050	0.049	0.051	0.048	0.043	0.006	0.052	0.065	0.044	0.036	0.055	0.052	0.040	0.045	0.046
5	0.102	0.131	0.081	1.017	0.047	0.108	0.102	0.106	0.101	0.091	0.150	0.049	0.062	0.104	0.106	0.075	0.108	0.110	0.107	0.098
6	0.084	0.054	0.094	0.047	1.042	0.062	0.058	0.061	0.058	0.052	0.033	0.104	0.081	0.064	0.063	0.074	0.062	0.064	0.061	0.056
8	0.874	0.028	0.075	0.036	0.150	1.308	0.559	0.403	0.517	0.273	0.036	0.347	0.319	0.273	0.145	0.441	0.362	-0.020	0.369	0.978
9	0.125	-0.012	-0.022	0.067	0.063	0.190	1.464	0.236	1.244	0.172	0.015	0.076	0.126	0.145	0.023	0.267	0.241	-0.135	0.249	0.835
10	0.043	0.011	0.182	0.019	0.021	0.055	0.374	1.140	0.318	0.050	0.005	0.028	0.041	0.042	0.015	0.069	0.063	-0.014	0.074	0.170
11	0.005	0.008	0.006	0.055	0.002	0.005	0.008	0.002	1.007	0.002	0.008	0.002	0.002	0.003	0.006	-0.001	0.001	0.010	0.002	-0.014
12	0.014	0.024	0.048	0.023	0.366	-0.003	0.046	0.028	0.133	1.153	0.012	0.028	0.012	0.003	0.023	-0.014	-0.013	0.051	-0.009	-0.122
13	0.400	0.202	0.458	0.060	0.186	0.522	0.480	0.498	0.478	0.435	1.029	0.204	0.431	0.565	0.652	0.447	0.502	0.662	0.453	0.469
14	0.365	0.165	0.371	0.053	0.171	0.484	0.453	0.470	0.451	0.404	0.026	1.195	0.817	0.516	0.511	0.706	0.477	0.510	0.487	0.437
15	0.049	0.011	0.026	0.006	0.022	0.069	0.067	0.070	0.066	0.056	0.003	0.025	1.120	0.084	0.027	0.763	0.072	0.021	0.055	0.063
16	0.955	0.198	0.497	0.117	0.470	1.349	1.412	1.519	1.405	1.204	0.061	0.485	0.803	2.004	0.471	0.951	1.566	0.326	1.077	1.279
17	0.681	0.504	1.113	0.116	0.304	0.832	0.671	0.664	0.669	0.651	0.053	0.347	0.535	0.604	1.718	0.611	0.652	1.831	0.765	0.709
18	0.068	0.015	0.036	0.008	0.031	0.095	0.092	0.097	0.091	0.077	0.004	0.034	0.177	0.121	0.038	1.146	0.099	0.029	0.077	0.088
19	1.672	0.342	0.862	0.204	0.823	2.365	2.479	2.667	2.466	2.111	0.107	0.849	1.407	1.761	0.820	1.667	2.749	0.551	1.888	2.243
20	0.606	0.450	0.995	0.104	0.270	0.741	0.596	0.590	0.594	0.579	0.047	0.309	0.476	0.538	0.641	0.543	0.579	1.636	0.681	0.630
21	0.547	0.155	0.300	0.070	0.261	0.755	0.740	0.767	0.739	0.629	0.038	0.393	0.511	0.550	0.301	0.771	0.787	0.255	1.579	0.699
22	0.157	-0.028	-0.055	0.013	0.081	0.243	0.283	0.311	0.282	0.226	0.009	0.094	0.164	0.190	0.012	0.369	0.325	-0.228	0.302	1.242

Source: Social Accounting Matrix – Portugal, 1999 (Appendix A)

Fixed-price multipliers (M_{fp})

	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
2	1.159	0.096	0.176	0.027	0.214	0.184	-0.271	0.164	-0.040	0.013	-0.005	0.871	-0.014	0.268	0.283	-0.356	0.158	0.279	0.085	0.110
3	0.813	1.493	0.309	0.090	0.629	0.340	-0.352	0.347	0.030	0.106	0.018	0.611	0.297	0.281	0.274	0.283	0.351	0.363	0.216	0.196
4	0.138	0.119	0.979	0.013	0.095	0.079	-0.096	0.080	0.001	0.022	0.003	0.154	0.056	0.081	0.070	0.021	0.081	0.084	0.043	0.047
5	0.114	0.164	0.078	1.013	0.071	0.081	-0.081	0.077	0.003	0.016	0.141	0.094	0.099	0.078	0.108	0.218	0.075	0.117	0.059	0.045
6	0.057	0.043	0.091	0.067	1.023	0.034	-0.041	0.032	-0.002	0.006	0.001	0.128	0.013	0.042	0.044	-0.022	0.031	0.046	0.019	0.020
8	0.718	0.030	0.200	0.015	0.135	1.258	1.110	0.325	0.333	0.161	-0.001	0.564	0.232	0.237	0.203	0.093	0.274	0.177	0.334	0.407
9	0.065	0.147	0.019	0.018	0.073	0.006	-3.110	0.043	-1.016	0.027	0.003	0.046	-0.312	0.054	0.012	-0.391	0.045	-0.007	-0.031	0.330
10	-0.010	-0.154	0.444	-0.019	-0.055	0.057	4.525	1.118	1.522	0.003	-0.002	0.024	0.523	-0.021	0.026	0.629	0.012	0.055	0.123	-0.383
11	0.019	0.005	0.005	-0.009	0.005	0.030	-0.091	0.009	0.969	0.004	-0.001	0.015	0.000	0.007	0.005	-0.006	0.008	0.004	0.008	0.016
12	-0.030	-0.197	0.062	0.005	0.445	0.071	4.888	0.045	2.102	1.578	-0.003	0.035	0.556	-0.028	0.024	0.667	0.009	0.047	0.147	-0.383
13	0.362	0.229	0.427	0.040	0.125	0.448	-0.657	0.405	-0.092	0.034	1.007	0.300	0.139	0.650	0.706	-0.053	0.391	0.696	0.223	0.269
14	0.201	0.125	0.234	0.022	0.069	0.251	-0.362	0.224	-0.051	0.019	0.004	1.166	-0.011	0.365	0.385	-0.470	0.216	0.379	0.120	0.150
15	0.058	0.017	0.044	0.003	0.023	0.088	-0.054	0.081	0.016	0.036	0.000	0.048	-0.292	0.176	0.027	-1.671	0.084	0.026	0.035	0.047
16	0.380	0.142	0.352	0.025	0.176	0.548	-0.620	0.653	0.106	0.293	0.003	0.320	0.224	1.411	0.212	0.202	0.687	0.209	0.276	0.334
17	0.678	0.503	0.871	0.089	0.199	0.781	-1.272	0.589	-0.317	-0.126	0.015	0.558	0.204	0.667	1.716	-0.324	0.526	1.692	0.391	0.465
18	0.010	0.003	0.007	0.001	0.004	0.015	-0.008	0.013	0.003	0.006	0.000	0.008	-0.242	0.032	0.004	-0.312	0.014	0.004	0.006	0.008
19	1.020	0.377	0.940	0.065	0.475	1.476	-1.663	1.766	0.295	0.801	0.009	0.860	0.606	1.106	0.563	0.557	1.859	0.533	0.745	0.900
20	0.685	0.511	0.883	0.091	0.200	0.786	-1.288	0.587	-0.328	-0.136	0.015	0.563	0.227	0.671	0.728	-0.306	0.522	1.728	0.394	0.468
21	0.428	0.114	0.393	0.023	0.133	0.644	1.645	0.680	1.105	0.651	0.013	0.426	2.330	0.274	0.272	2.848	0.736	0.296	1.363	0.158
22	0.303	0.061	0.251	0.012	0.111	0.474	0.896	0.530	0.699	0.472	0.007	0.294	0.578	0.295	0.155	0.687	0.577	0.080	0.832	1.150

Source: Social Accounting Matrices – Portugal. 1998 and 1999 (Appendix A)